

REMARKS

Claims 64-68, 70-80, and 83-95 are pending. Claims 64, 94, and 95 are amended herein and claims 93 and 95 canceled, without prejudice. No new matter has been added by virtue of the amendments, support therefore being found throughout the originally filed claims and specification.

1. 35 U.S.C. §103 Rejections

Claims 64-68, 70-80, and 83-95 are rejected under 35 U.S.C. §103(a) over Singhvi et al (6,368,838 B1) in view of Dewez et al (WO 96/15223) and Anderson et al (6,686,184 B1).

Applicants respectfully traverse.

Applicants' claim 64 recites a device for adhering a biomolecule in a predetermined position comprising a substrate comprising a polymeric surface and having thereon a plurality of cytophilic regions that can adhere a biomolecule and cytophobic regions to which the biomolecules do not adhere, wherein the cytophobic regions are contiguous with the cytophilic regions. The cytophobic regions are formed of one or more surfactant compounds. The device further comprises microfluidic channels on the polymeric surface.

Singhvi describes a plate having one or more cytophilic islands on its surface isolated by cytophobic regions. These cytophilic and cytophobic regions are formed by SAMs.

However, Singhvi at least fails to teach or suggest that (1) the substrate comprises a polymeric surface, (2) the cytophobic regions are formed of one or more surfactant compounds, and (3) microfluidic channels on the polymeric surface, as claimed by Applicants. Rather, Singhvi's surface is metallic. Further, Singhvi's cytophobic regions are created by SAMs. Singhvi is further devoid of any teaching or suggestion of microfluidic channels.

Applicants further disagree with the Office's assertion that "it would have been obvious to provide the cytophobic regions of Singhvi et al with a surfactant to inhibit binding of

extracellular matrix protein to these regions as suggested by Dewez et al.” Applicants provide a device wherein a surfactant is used as a non-adhesive agent on portions of a surface that remains bare or uncovered by a binding agent. The surfactant prevents the binding of protein or cells to the portions of the surface to which the surfactant is bound.

Singhvi provides a surface having cytophobic and cytophilic regions. Singhvi’s cytophobic regions are formed of SAMs. There would be no motivation to modify Singhvi’s cytophobic regions so as to provide surfactant compounds (to inhibit binding) because these regions are already cytophobic and, thus, are already non-adhesive.

Applicants further disagree with the Office’s assertion that “it would have further been obvious to provide the device of Singhvi et al with microfluidic channels to obtain the function of these channels in patterning a surface as disclosed by Anderson et al.” While Anderson describes patterning surfaces using microfluidic stamps. Anderson and Singhvi both at least fail to teach or suggest such a combination of cytophobic regions contiguous with cytophilic regions and microfluidic channels.

Applicants respectfully submit that Singhvi, Dewez, and Anderson, alone and in combination, at least fail to teach or suggest a polymeric surface having cytophobic regions contiguous with cytophilic regions, wherein the cytophobic regions comprise one or more surfactant compounds, and wherein microfluidic channels are further formed over the cytophobic and cytophilic regions.

Singhvi, Dewez, and Anderson each teach different types of patterned surfaces for selective adhesion of materials. These surfaces are patterned using different methods. The selective adhesion provided by each of the patterned surfaces is accomplished in a different way. There is no teaching or suggestion that these references could or should be combined as suggested by the Office. Rather, such a combination can only be made in hindsight in view of Applicants’ own disclosure.

Accordingly, it is respectfully submitted that claim 64 is patentable over Singhvi, Dewez, and Anderson. Claims 65-68, 70-80 and 83-94 depend from claim 64 and, likewise, are patentable over Singhvi, Dewez, and Anderson. Reconsideration and withdrawal of the rejection is respectfully requested.

Applicants' claim 95 recites a device for adhering a biomolecule in a predetermined position comprising a substrate comprising a polymeric surface and having thereon a plurality of cytophilic regions that can adhere a biomolecule and cytophobic regions to which the biomolecules do not adhere. The cytophobic regions are contiguous with the cytophilic regions, and the cytophobic regions comprise one or more surfactant compounds. Further, the surfactant compound is not covalently linked to the substrate.

As set forth above, Singhvi at least fails to teach or suggest that the cytophobic regions comprise one or more surfactant compounds. Thus, Singhvi further fails to teach or suggest that the surfactant compound is not covalently linked to the substrate.

While Dewez describes the conditioning of surfaces with surfactants, there is no teaching or suggestion that the surfactants are not covalently linked to the substrate. Further for such a feature to be inherent in Dewez, the feature must necessarily flow from the teachings of Dewez. Applicants respectfully submit that Dewez would not necessarily result in surfactant non-covalently linked to the surfaces of Dewez.

As set forth above, Anderson at least fails to teach or suggest a polymeric surface having cytophobic regions contiguous with cytophilic regions, wherein the cytophobic regions comprise one or more surfactant compounds. Thus, Anderson fails to teach or suggest surfactant compounds that are not covalently linked to the substrate.

In view thereof, no combination of Singhvi, Dewez, and Anderson teach or suggest a polymeric surface having cytophobic regions contiguous with cytophilic regions, wherein the

cytophobic regions comprise one or more surfactant compounds, and wherein the surfactant compounds are not covalently linked to the substrate.

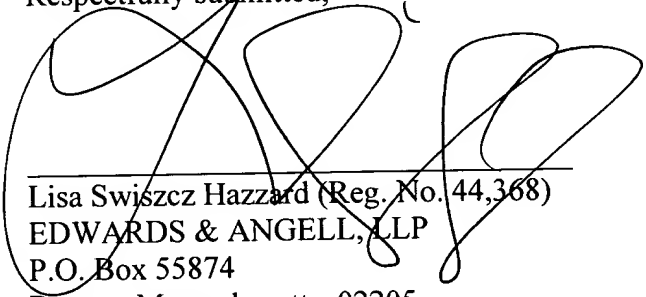
Accordingly, claim 95 is patentable over Singhvi, Dewez ad Anderson. Reconsideration and withdrawal of the rejection is respectfully requested.

CONCLUSION

In view of the foregoing, applicants request reconsideration and allowance of claims 64-68, 70-80 and 83-95.

It is believed that no fees are required for consideration of this response. However, if for any reason the fee paid is inadequate or credit is owed for any excess fee paid, the Office is hereby authorized and requested to charge Deposit Account No. **04-1105**.

Respectfully submitted,



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